Program #1
Due: Tuesday Feb 4th, 2014 at 11:30PM

Instructor	Dr. Stephen Perkins
Office Location	ECSS 4.609
Office Phone	972-883-4522 (you can call me during office hours)
Email Address	stephen.perkins@utdallas.edu
Office Hours	Tuesday and Thursday after class (9:45AM to 10:30AM) and by appointment
TA	Indu Priya Kodali ixk130230@utdallas.edu Clark Center's CN1.202D Monday 10AM - 1PM Wednesday 5PM - 8PM

Purpose

Demonstrate the ability to create and execute a C++ program using moderately complex control structures and Input/Output routines.

Assignment

Write a program that creates a series of one or more loan amortization schedules. The program should query the user for an input file name and an output file name. The input file will contain the number of schedules that need to be generated as well as the information needed to generate each schedule (initial loan principal, annual percentage rate, and monthly payment). Each generated amortization schedule should be well formatted and should include a breakdown of the principal and interest for each payment, the total number of monthly payments, and the total interest paid for the life of each loan. This information should be printed to the screen as well as sent to the output file.

The program should use a separate function to calculate the amortization table(s).

Deliverables

You must submit your homework through ELearning. You must include your .cpp files, your input file, and your output file generated from your input file. Code must be well formatted and well commented.

Notes

Remember we are talking about money. All values must represent dollars and cents. You might consider representing all dollar amounts as an integer that represents the number of pennies.

The last payment may not be exactly the same as the rest. Make sure you check for this.

Programs are due by 11:30PM on Tuesday February 5th.

No late homework is accepted.

Make sure you understand this Program because Program #3 will draw on this work.

If you are not familiar with Loan Amortization, you will need to research via Google or other mechanism.

Input File Format

The input file is a text file that contains integers and doubles. Each number is on its own line. You can create this file using notepad or your favorite text editor. The first entry is an integer that defines the number of schedules that need to be generated using the data in the file. Each set of three lines after the first line will contain the data for a single amortization schedule. In order, they will be the principal, annual interest rate, and the monthly payment.

An example input file would look like:

```
3
1000.00
0.035
125.00
5000.00
0.04
165.00
200000.00
0.055
1100.00
```

Example Output Format of a Single Table (screen and file)

```
Starting Balance: $1000.00
Annual Interest Rate: 0.035
Monthly Payment: $120.00

Payment     Amount            Interest    Principal         Balance

1           120.00            2.91        117.09            882.91
2           120.00            2.57        117.43            765.48
3           120.00            2.23        117.77            647.71
4           120.00            1.88        118.12            529.59
5           120.00            1.54        118.46            411.13
6           120.00            1.19        118.81            292.32
7           120.00            0.85        119.15            173.17
8           120.00            0.50        119.50            53.67
9           53.82             0.15        53.67             0.00

Total Payments Made: 9
Total Interest Paid: $13.82
```